

REMARKS

Claims 30-31, 39, 48-49 and 56 have been amended. Claims 30-63 are currently pending in the present application. The Examiner's indication that claims 44 and 60 are allowable over the prior art is hereby acknowledged with appreciation.

Independent claims 30 and 48 have been amended to require an amount of from about 1 to about 10 percent by weight, based on the weight of the flour, of polydextrose anti-staling agent be used in the step of forming a baking dough. Basis for the range of polydextrose of from about 1 percent to about 10 percent by weight, based on the flour weight, can be found at page 7, first full paragraph of the specification, which makes it clear that amounts of polydextrose of from about 1 percent to about 10 percent by weight are contemplated for the various compositions which may be made by the methods of claims 30 and 48.

Dependent claims 31 and 49 have been amended to require an amount of from about 4 to about 10 percent by weight, based on the weight of the flour, of polydextrose anti-staling agent be used in the step of forming a baking dough. Basis for the range of polydextrose of from about 4 percent to about 10 percent by weight, based on the flour weight, can be found at page 7, first full paragraph of the specification.

Independent claims 39 and 56 have been amended to require an amount of from about 1 to about 5 percent by weight, based on the weight of the flour, of polydextrose anti-staling agent be used in a bread dough composition. Basis for the range of polydextrose of from about 1 percent to about 5 percent by weight, based on the flour weight, for a bread dough composition can be found at page 7, first full paragraph of the specification.

I. Claims 30, 39, 48 and 56 Comply 35 U.S.C. §112, First Paragraph and Second Paragraph

Claims 30, 39, 48 and 56 have been rejected by the Examiner under 35 U.S.C §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the Examiner avers that “in an amount effective to reduce staling without causing undue dough stickiness” is not supported by the specification. Even though Applicant does not agree with this rejection, claims 30, 39, 48 and 56 have been amended to replace this limitation with “in an amount of from about 1 percent to about 10 percent (or about 5 percent) by weight, based on the weight of the flour” to obviate this rejection. Withdrawal of this rejection is respectfully requested.

Claims 30, 39, 48 and 56 have been rejected by the Examiner under 35 U.S.C §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner avers that the phrase “undue dough stickiness” is indefinite because the scope of the claims cannot be determined. Even though Applicant does not agree with this rejection, the above mentioned amendment to claims 30, 39, 48 and 56 should obviate this rejection. Withdrawal of this rejection is respectfully requested.

II. Claims 39-47 and 56-63 Comply 35 U.S.C. §112, First Paragraph

Claims 39-47 and 56-63 have been rejected by the Examiner under 35 U.S.C §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the Examiner alleges that the limitation “leavening agent” has no support in the specification, and that an amount of polydextrose of from 5 to

10% for use in a bread product does not have support in the specification. These rejections are traversed for reasons that follow.

With regard to the limitation “leavening agent,” although the specification only exemplifies the use of yeast as a leavening agent in bread products, the specification does state “[t]he present invention can be used with commonly used dough preparation processes.” *Specification, page 7*. Additionally, other leavening agents, such as baking powder, are exemplified for use in other baked products. *See Specification, page 17*. Further, it is generally known, through “commonly used dough preparation processes,” that leavening agents, such as yeast, baking powder, and/or other chemical leavening agents, are required in order for dough to rise during baking. It is submitted that one of ordinary skill in the art would understand from the specification, as originally filed, that the inventor, through “commonly used dough preparation processes,” was in possession of the broader concept of generally known leavening agents, particularly since at least two different leavening agents, namely yeast and baking soda, are exemplified in the specification for use in dough preparation. Therefore, the Applicant respectfully traverses this rejection.

With reference to the Examiner’s rejection of certain claims relating to the preparation of baked bread products, based on the limitation of an amount of polydextrose ranging from 5 to 10 percent, the Applicant respectfully submits that claims 39-47 and 56-63, as amended, overcome this rejection. In particular, claims 39-47 and 56-63 now require an amount of polydextrose ranging from about 1 percent to about 5 percent in the baked bread products. Therefore, for at least these reasons, claims 39-47 and 56-63 comply with the requirement of 35 U.S.C. §112, first paragraph. Withdrawal of this rejection is respectfully requested.

III. The Claims Are Patentable Over Dartey et al.

Claims 30-31, 36 and 48-50 have been rejected under 35 U.S.C. §102(b) as being anticipated by Dartey et al., U.S. Patent No. 4,678,672 ("*Dartey*"). Further, claims 37-38, and 54-55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Dartey* in view of The Encyclopedia of Chemical Technology, 1992 Edition ("*The Encyclopedia of Chemical Technology*"). These rejections are respectfully traversed and reconsideration is requested for the reasons which follow.

The independent claims of the present application relate to methods for making baked products having improved anti-staling properties, as well as to baking dough used in methods for baking which provide baked products with improved anti-staling properties. The present inventors have surprisingly found that water-soluble polydextrose can serve as an anti-staling agent when employed in an amount between about 1 percent and about 10 percent by weight, based on the weight of the flour. This amount of a water-soluble polydextrose anti-staling agent gives a surprising improvement in the staling properties of baked products. None of the prior art cited by the Examiner teaches the use of water-soluble polydextrose in baked product in such amounts, or recognizes this unique property of water-soluble polydextrose.

Dartey teaches a reduced calorie cracker product produced from dough compositions which may, according to *Dartey*, contain 25-85 percent by weight of flour, 0-10 percent by weight of fat or shortening, 5-20 percent by weight of water-soluble polydextrose, 0-5 percent by weight of an emulsifier, 0.5 to about 5 percent by weight of a leavening system, and 1.5 to 10 percent of a cellulose bulking agent.

First, with regard to the rejection under 35 U.S.C. § 102(b), when the prior art discloses a range which touches the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to

constitute an anticipation under the statute”. *In re Schaumann*, 197 USPQ 5 (CCPA 1978). What constitutes a “sufficient specificity” is fact dependent. If the claims are directed to a narrow range, the reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, “it may be reasonable to conclude that the narrow range is not disclosed with ‘sufficient specificity’ to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious.” MPEP, Section 2131.03.

In the present case, the Examiner alleges that the disclosure of a polydextrose range endpoint of 5.5 percent by weight of flour anticipates the claimed range even though the “examples show a higher amount of polydextrose”. *Office Action, Section 4 referring back to Section 3 of Paper 18*. The Applicant respectfully submits that this disclosure of a range endpoint, with no specific exemplification of embodiments with polydextrose amounts near the lower end of the range, does not amount to the “sufficient specificity” required for anticipation under the statute. Moreover, from the evidence given below, it is clear that *Dartey* does not actually contemplate compositions within the scope of the present claims since *Dartey* requires that the reduced calorie cracker composition have a calorie content of from 2-9.3.3 kcal/gram.

The stated objective of *Dartey* is to provide reduced calorie crackers with a calorie reduction of at least 25 percent through replacing either the flour component or the fat/shortening component of the cracker dough with polydextrose. *See Dartey, col. 8, In 20-24*. According to *Dartey*, such reduced calorie crackers must have about 2.9-3.3 kcal/gram.¹ *See Dartey, col. 8, In 15-17*. This is important because a skilled person can easily determine, using commercially available software, that certain compositions of *Dartey* with a high flour content and a low polydextrose content, as would be required to arrive at the present invention, would not achieve the desired level of caloric reduction. Thus, such

¹ Although *Dartey* refers to “calories/gram” he clearly means “kcal/gram” as explained in the enclosed Declaration of Ms. Garman.

compositions, though within the broad ranges mentioned in the Summary of Invention of *Dartey* are not actually contemplated by *Dartey* since they do not meet the key requirement of *Dartey* that the reduced calorie crackers have calorie content of 2.9-3.3 kcal/gram. Further, *Dartey* does not teach or suggest the unexpected ability of water-soluble polydextrose to provide for anti-staling properties as is recognized by the present invention.

In addition, when *Dartey* is taken as a whole, the dough composition envisioned by *Dartey* is actually much narrower than the ranges disclosed in the *Summary of Invention* section of *Dartey* (col. 6, line 58 through col. 7, line 36). In fact, only a subset of the ranges disclosed in the *Summary of Invention* section of *Dartey* meets the objective of the *Dartey*, which is to produce a cracker with a calorie content of 2.9-3.3 kcal/gram. This fact is further supported by a Rule 132 Declaration attached herewith from a food science expert, Caroline Garman, which shows that a typical dough composition meeting all the requirements of the present invention as represented by amended claims 30, 39, 48 and 56, would not be anticipated by *Dartey* because the baked product derived from that typical dough composition would not fall within the calorie content range as required by *Dartey*.

In addition, *Dartey* provides sufficient information for a skilled person to determine that a dough composition meeting all the requirements of claims 30, 39, 48 and 56, which require far less than 10% of polydextrose by weight based on the total composition (or no more than 10% polydextrose by weight based on the flour weight), would not achieve a calorie reduction of more than 10%. In particular, the *Dartey* states at lines 53-62 of col. 3 that at least 20% zero calorie cellulosic bulking agent by weight based on the total composition is required to achieve a 10% overall calorie reduction. Assuming that *Dartey* uses the maximum amount of cellulosic bulking agent envisioned, which is 10% by weight, *Dartey* has to use at least 10% polydextrose by weight based on the total composition to achieve only a 10% calorie reduction, since both polydextrose and cellulosic flour substitute essentially contribute zero calories to a food composition. Therefore, from this a skilled person would conclude

that it would be necessary to use far more than 10% polydextrose by weight, based on the weight of the total composition, to achieve the minimum 25% calorie reduction required by the *Dartey* disclosure. Accordingly, a skilled person would conclude that the use of only 10% by weight of polydextrose, based on flour weight, i.e. the maximum amount of polydextrose used within the scope of the present claims, which is even less polydextrose than 10% by weight, based on the weight of the total composition, would be far too little polydextrose to achieve the 25% calorie reduction required by *Dartey*. Accordingly, a skilled person would not contemplate using the amounts of polydextrose presently claimed since they would be expected, from the teachings of *Dartey* to provide an insufficient calorie reduction. See also the Declaration of Caroline Garman.

When the *Dartey* disclosure is critically analyzed, the endpoints of the broad ranges relied upon by the Examiner to allegedly anticipate the present claims, also do not total to 100 wt %. First, *Dartey* states that water is “of course necessary” in an amount from about 10 to about 30 wt % and that fat/emulsifiers need be present in an amount from about 3 to about 10 wt %. See *Dartey*, col. 14, In 6-16. When the minimum amounts of water (10%), fat/emulsifiers (3%), leavening agent (0.5%), cellulosic bulking agent (1.5%), and polydextrose (5%) are summed, the maximum amount of flour which can possibly be present is 80 wt %. Therefore, the only disclosure relied upon by the Examiner to allegedly anticipate the present claims (range endpoints of 85% flour and 5% polydextrose) is clearly erroneous based on the entirety of *Dartey* disclosure, and it is not clear what the correct ranges should be. Thus, for this additional reason, the teachings of *Dartey* do not disclose the presently claimed ranges with “sufficient specificity to constitute an anticipation under the statute.” *In re Schaumann*, 197 USPQ 5 (CCPA 1978).

Moreover, Example 1 of *Dartey* discloses a composition including 49.72% by weight of flour and 9.31% by weight of polydextrose, based on the total weight of the dough. Example 2 of *Dartey* discloses a composition including 43.81% by weight of flour and 8.93% by weight of polydextrose,

based on the total weight of the dough. In terms of the weight percent of polydextrose, based on the weight of the flour, example 1 of *Dartey* contains 18.7% by weight polydextrose, and example 2 of *Dartey* contains 16.6% by weight of polydextrose, based on the flour weight. Thus, examples 1-2 of *Dartey* clearly fall far outside the scope of all the claims of the present application. Accordingly, *Dartey* does not anticipate the present claims and, for at least these reasons, the rejection of claims 30-31, 36, and 48-50 under 35 U.S.C. §102(b) as being anticipated by *Dartey* is respectfully traversed and reconsideration and withdrawal of the rejection is requested.

With respect to the broad disclosure of *Dartey* and the alleged obviousness of the present claims, at first glance, the ranges given for the various ingredients appear to overlap with the claimed ranges of ingredients of the present invention. Specifically, if one were to select a composition including an amount of flour at the high end of the range of *Dartey* (i.e. about 55-85% by weight) and including a relatively low amount of water-soluble polydextrose (i.e. about 5-8% by weight), it would appear to be possible to arrive at a composition according to the present invention. However, as discussed above, *Dartey* clearly does not contemplate such compositions and, in fact, teaches a skilled person away from employing the relative amounts of flour and polydextrose, which are employed by the present invention because the caloric content of the resultant product would be too high.

In order to arrive at the composition of the present invention from the teachings of *Dartey*, a skilled person would first have to select a dough composition from *Dartey* having a flour content at the high end of the disclosed range (i.e. about 55-85% by weight) in order to satisfy the requirement of the present claims that the dough composition cannot include more than 10% by weight of polydextrose, based on the flour weight. This is important because a skilled person reading *Dartey* would conclude that a composition with a high flour content and a low water-soluble polydextrose content, as would be required to arrive at the present invention, would not achieve the desired level of caloric reduction. Thus, *Dartey* clearly does not contemplate such compositions.

This is consistent with Examples 1-2 of *Dartey*. In Example 1, the flour content is higher than the flour content of Example 2, and thus, the polydextrose content in Example 1, relative to the flour content (i.e., 18.7%), is also higher than the polydextrose content of Example 2, relative to the flour content (i.e., 16.6%). Moreover, the enclosed declaration of a food science expert, Ms. Caroline Garman, demonstrates that two compositions falling within the scope of the claims of the above-identified application and within the broad ranges found in the Summary of Invention of *Dartey*, clearly do not meet the requirement of *Dartey* that the cracker compositions prepared therefrom have a caloric content of 2.9-3.3 kcal/gram. More specifically, it was found that these two exemplary compositions would have caloric contents of 3.61 kcal/gram and 3.68 kcal/gram, respectively. Accordingly, the enclosed Declaration of Caroline Garman clearly demonstrates that not all compositions falling within the ranges given in the Summary of Invention of *Dartey* meet the requirement of *Dartey* of providing reduced calorie cracker compositions having a caloric content of 2.9-3.3 kcal/gram. Accordingly, it is clear from the examples in the Declaration that *Dartey* does not contemplate all compositions falling within the broad ranges of the Summary of the Invention since some of such compositions do not achieve the critical requirement of *Dartey* of a 25% caloric reduction down to a calorie content of 2.9-3.3 kcal/gram.

Accordingly, for these reasons the teachings of *Dartey*, when considered as a whole, do not lead a skilled person to the particular methods or compositions of the present invention. In addition, the Examiner has relied on *The Encyclopedia of Chemical Technology* as teaching the addition of enzymes to improve volume, texture and storage properties of bread. However, this reference does not cure the deficiencies of *Dartey* with regard to teaching the appropriate quantity of water-soluble polydextrose to be used in the compositions of the present invention. For these reasons, it is considered that claims 30-63 are clearly novel and unobvious over *Dartey* taken alone, or in combination with *The Encyclopedia*

of *Chemical Technology*. Favorable consideration and withdrawal of the rejection is respectfully requested.

IV. The Claims Are Patentable Over Engelbrecht et al

Claims 30-32, 34, 39-41, 43, 48-49, 51-52 and 56-59 stand rejected under 35 U.S.C. §102(b) as being anticipated by Engelbrecht et al., U.S. Patent No. 5,614,216 (*Engelbrecht*). Further, claims 33, 35, 37-38, 42, 45-47, 53-55 and 61-63 stand rejected under 35 U.S.C §103(a) as being unpatentable over *Engelbrecht* in view of *The Encyclopedia of Chemical Technology*. This rejection, at least insofar as it applies to the pending claims as amended, is respectfully traversed and reconsideration is requested for reasons, which follow.

Engelbrecht relates to a microwaveable bread product made from dough which may include flour, water, leavening agent, about 7 to about 15 percent by weight of shortening, based on the total weight of flour, and about 2.0 percent by weight of fiber, based on the total weight of the flour. Among the materials which are mentioned for use as fiber in the Engelbrecht patent are oat bran, wheat bran, soy polysaccharide, psyllium mucilloid, methyl cellulose, and polydextrose. See *Engelbrecht*, col. 3 ln 55-58. Further, *Engelbrecht* discloses that soluble fibers, and natural and synthetic fibers work equally well. See *Engelbrecht*, col. 3, ln 53-55.

Based on the state of the art as of the filing date of the present application, the passing reference in *Engelbrecht* to the use of polydextrose as a fiber material, without specific exemplification, does not render the present claims unpatentable. More specifically, *Engelbrecht* provides a broad, generic disclosure of a number of parameters (i.e., type of polydextrose, type of fiber, solubility of fiber, and amount of fiber and amount of flour) which could be potentially manipulated to arrive at something similar to the present invention, as claimed in the amended claims. This, however, is clearly insufficient to establish anticipation under 35 U.S.C §102 (b), which requires identity of disclosure.

See *In re Meyer*, 202 USPQ 175, 179 (CCPA 1979). Most importantly, nowhere in *Engelbrecht* is the specific use of water-soluble polydextrose exemplified, or even disclosed.

With respect to the issue of obviousness, there must be some reason, suggestion or motivation in the art to make the specific combination of the various disclosed parameters in the manner required to arrive at the presently claimed invention. See, e.g., *In re Deminski*, 230 USPQ 313, 316 (Fed. Cir. 1986). The mere fact that the parameters of the prior art could be so combined does not make the combination obvious unless the prior art suggested the desirability of the combination. See, e.g., *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984). No such suggestion is present in the record for making this specific combination; therefore, any rejection on this basis could only be supported by impermissible hindsight.

As discussed above, the basis of the presently claimed invention is the use of a specified amount of water-soluble polydextrose to inhibit staling in various yeast leavened baked products and/or in leavened bread products. The art of record does not disclose the claimed methods or the dough compositions used in the claimed methods, and provides no disclosure leading one of ordinary skill in the art to use polydextrose in the manner claimed to achieve the anti-staling effect.

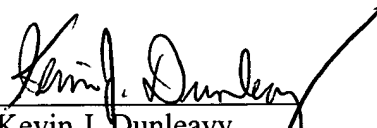
In addition, the Examiner has relied on *The Encyclopedia of Chemical Technology* as teaching the addition of enzymes to improve volume, texture and storage properties of bread. However, this reference does not cure the deficiencies of *Engelbrecht* with regard to teaching the appropriate quantity of water-soluble polydextrose to be used in the compositions of the present invention. Moreover, neither *Engelbrecht* nor *The Encyclopedia of Chemical Technology* recognizes the significant, unexpected beneficial effect of adding water-soluble polydextrose to a baked product of providing anti-staling properties.

Accordingly, all of the present claims are considered to be unobvious over *Engelbrecht* taken alone or in combination with *The Encyclopedia of Chemical Technology* (or any other art of record) on

the basis that a person of ordinary skill in the art when reading *Engelbrecht* would have no reason or motivation to select all of the various parameters as required to arrive at the present invention. For at least these reasons, favorable consideration and withdrawal of the rejection over *Engelbrecht* in combination with *The Encyclopedia of Chemical Technology* is respectfully requested.

In view of the foregoing remarks, Applicant respectfully submits that all of the pending claims are in condition for allowance and respectfully requests a favorable Office Action so indicating.

Respectfully submitted,


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MARKED-UP COPY SHOWING CLAIM AMENDMENTS

IN THE CLAIMS

30. (Thrice Amended) A method of making a baked product having improved anti-staling properties, the method comprising the steps of:

forming a baking dough by combining flour, yeast, water, and water-soluble polydextrose anti-staling agent in an amount ~~effective to reduce staling without causing undue dough stickiness~~ of from about 1 percent to about 10 percent by weight, based on the weight of the flour; and
baking the dough.

31. (Thrice Amended) The method of claim 30 wherein said polydextrose is present in the baking dough in an amount of from about ~~41~~ percent to about 10 percent by weight, based on the weight of the flour.

39. (Thrice Amended) A method of making a baked bread product having improved anti-staling properties, the method comprising the steps of:

forming a bread dough by combining flour, a leavening agent, water, and water-soluble polydextrose anti-staling agent in an amount ~~effective to reduce staling without causing undue dough stickiness~~ of from about 1 percent to about 5 percent by weight, based on the weight of the flour; and
baking the bread dough.

48. (Thrice Amended) A baking dough used for making a baked product, the baking dough comprising:

flour, yeast, water, and water-soluble polydextrose anti-staling agent in an amount ~~effective to reduce staling without causing undue dough stickiness~~ of from about 1 percent to about 10 percent by weight, based on the weight of the flour.

49. (Thrice Amended) The dough of claim 48 wherein said polydextrose is present in the baking dough at a level of ~~between about 41 percent and about 10 percent by weight~~, based on the weight of the flour.

56. (Thrice Amended) A bread dough used for making a baked bread product, the bread dough comprising:

flour, a leavening agent, water, and water-soluble polydextrose anti-staling agent in an amount ~~effective to reduce staling without causing undue dough stickiness~~ of from about 1 percent to about 5 percent by weight, based on the weight of the flour.